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At the meeting of the association the prizes offered by Mr. Henry Lomb of Rochester, for the best essays on subjects of sanitary importance (*Science*, v. 80), will be awarded.

— William Benjamin Carpenter, the eminent English physiologist, died in London, November 10, from the effects of terrible burns caused by the upsetting of a lamp while he was taking a vapor bath for rheumatism. Dr. Carpenter was born at Bristol in 1813.

— Among recent deaths we note the following : Dr. Wm. A. Guy, at London, in his seventy-sixth year ; Jean Claude Bouquet, mathematician, at Paris, in his sixty-seventh year ; Dr. Max Sagemehl, in Amsterdam, August 2 ; Professor Hjalmar Holmgren, mathematician, Stockholm ; Ernest Dubruel, founder and publisher of the *Revue des sciences naturelles*, at Montpellier, May 14, in his fifty-sixth year ; Dr. J. Baeyer, president of the Royal Prussian geodetic institute, at Berlin, September 11, in his ninety-first year.

LONDON LETTER.

THE inauguration of the first practical 'telpher line' seems to have passed into history without adequate notice, though it is, in fact, the commencement of a new means of transportation which will probably develop into an important feature of industrial, if not of social, life. It is not intended to compete with railways, but to do cheaply the work of horses and carts, since by its means mineral or agricultural produce of any kind may be conveyed over considerable distances in large quantities at a comparatively small cost, and up and down steep inclines, without the need of constructing a road. The term 'telpher' is a legitimate, or at least convenient, abbreviation of a Greek compound word signifying 'carrying afar,' and a telpher line may be briefly described as an aerial light railway, driven electrically. The system is the invention of the late Prof. Fleeming Jenkin, F.R.S., and it has been severely tested for some months on a large experimental scale. Prof. Jenkin did not live to see the first practical line completed, and the final arrangements were worked out by Prof. Perry, the engineer to the Telpherage company. The line now under consideration is constructed at Glynde, on the Sussex estate of Lord Hampden, late speaker of the house of commons, and conveys clay from a clay-pit to a railway siding. It was opened on October 19. It consists of steel bars, $\frac{3}{4}$ of an inch in diameter and 66 feet long, supported 18 feet above ground on T-shaped posts about one chain apart. Two lines of way, an up and a down line (one

bar sufficing for each), are supported 8 feet apart on the cross-head of the T, the general appearance of the whole being not unlike gigantic telegraph posts and wires. The carriers, or 'skips' as they are technically termed, are iron trough-shaped buckets, each holding about 2 cwt., and suspended from the line by a light iron frame, at the upper end of which is a pair of grooved wheels, running along the line of rods. A train is made up of ten of these, the electric motor being in the centre. An automatic block system is provided, so that as many as twenty trains can be run on the line at once without possibility of collision. Moreover, an electric governor has been devised, so that the trains run at the same speed both on rising and falling gradients, even when the incline is 1 in 8. The initial source of power is a Ruston & Proctor engine, controlled by a Williams electric governor ; this drives a Crompton 6 'unit' shunt-wound dynamo. The maximum difference of potential is 190 volts, and the current for one train is 8 ampères. The Reckenzann motors run in parallel arc, and the resistance of each is large compared with that of the rods used to support the train and convey the current. The uniform speed is about four miles per hour, and it is claimed that material can be conveyed at a cost varying from 4 to 15 cents per ton per mile. A friend of the present writer has proposed to the Telpherage company to lay down a line in Trinidad, to bring material to the coast, the conveyance of which on muleback at present costs nearly \$2 per ton.

The death of Dr. Thomas Davidson will be severely felt at Brighton, where he had resided for some years past, as he was accustomed to devote a considerable amount of time and trouble to the arrangement of the geological and zoölogical collections in the town museum.

The beginning of the academical year at Oxford has been signalized by the opening of the new physiological laboratories, at the back of the university museum. The anti-vivisectionist party, in convocation, headed by some prominent resident members of the university, have made two determined attempts to prevent Professor Burdon Sanderson from teaching physiology as it should be taught ; but, fortunately for science, their efforts have been unsuccessful, and another great step has been made towards improving the medical school of the university.

On Nov. 9 the International inventions exhibition will be closed. The attendance up to the present time has been nearly 3,750,000 persons, and at present cheap excursion trains are being run from all parts of the British islands. The nightly simultaneous illumination of 10,000 glow electric lamps, and the marvellous chromatic dis-

plays with the electric light and the fountains, under Col. Sir Francis Bolton, still attract large crowds.

At a recent 'Gilchrist trust' lecture in Greenock, by Mr. William Lant Carpenter on the telephone, transmitters were placed on the lecture-table, and a party of ladies in the office of the *Glasgow herald*, twenty-five miles away, heard nearly the whole of the lecture.

In a district of London known as the Borough, and inhabited by a similar population to that in the Bowery, New York, a large theatre has recently been taken, mainly at the cost of the Duke of Westminster and Mr. Samuel Morley, and has been converted into a temperance music hall. For three or four years, on one night a week, for seven or eight months in the year, popular lectures on science are delivered, in which many very eminent men take an interest. Sir John Lubbock will lecture there on Nov. 3, upon ants. Temperance meetings, ballad concerts, and 'variety entertainments' occupy other nights in the week, and the managers are constantly receiving remarkable testimony to the good done by 'the Vic,' or Royal Victoria coffee-hall. W.

London, Oct. 31.

ST. PETERSBURG LETTER.

THE meteorological conditions of the last summer have attracted general attention in Russia. It is but too common to hear of the coldest or hottest season remembered by the oldest inhabitant; but the heat of the end of June, and of the whole of July, in the greater part of European Russia, was truly exceptional. In St. Petersburg the mean temperature of July was $21^{\circ}.2$ C.,—the highest since the observations began (1743), with the exception of July, 1757. In Moscow the mean temperature of July was $22^{\circ}.5$ C.—the highest in the seventy-five years' observations, except July, 1826, when it was $0^{\circ}.1$ higher. But as the mean of the present July is from observations outside the city, while in 1826 the observations were made in the city, it is probable this July was hotter. The heat was especially remarkable for its unabated continuance. It seems that long-continued anticyclones existed in the north and north-east of Russia, and thus warm and dry south and south-east winds were prevailing. A very great scarcity of water followed, especially in the south, where already the spring months had been dry. Lakes, ponds, and wells dried up, and some villages were obliged to sell all their cattle for want of water; and that for drinking purposes had to be brought from many miles away. In the north and centre of Russia many swamps dried up

entirely, and, in July and August, forest and peat fires occurred in many parts of the country. The large rivers were exceedingly low, and navigation seriously impeded; so that on the Volga there was low water as far down as Stavropol, below Simbirsk, while formerly it was not observed lower down than the mouth of the Kama.

From the beginning of August in some parts of the south, and later on in other parts of Russia, heavy and protracted rains followed, seriously damaging the harvest, and interrupting the building of the railroad from Ekaterinburg to Tjumen, in Siberia.

The first general meeting of the geographical society this season was held on the 14th of October, and the following news was communicated by the secretary: two additional government grants had been received by the society; five thousand rubles for the classification of the collection and publication of the travels of the deceased zoölogist, Sjevvertzof, and two thousand rubles for the collection of the music of the songs of the people. The first expedition, to start in 1886, will consist of the musician, Dutsch, and the secretary of the ethnographical section, and will visit the northern part of Russia, where the old folklore has been better preserved, owing to the absence of railroads and great cities. A thousand rubles have been bequeathed by the deceased member, Prince N. M. Galitzin, for geographical exploration. The proposed expedition to the glaciers of the Chang-Tengri, in the Thian-Shan, for which the society had granted an allowance, was postponed till 1886.

Besides the *Iswestia* (transactions), the following volumes of the memoirs have been issued, or are in preparation: vol. xiv., on general geography, containing Dr. Sperck's 'Russia of the far east.' This is a general description of the Amur country, including topography, climate, fauna, flora, ethnography, etc. The most interesting part is that on the colonization. The author has long resided in the country. Vol. xv., part i., will also soon be issued. It will contain the results of the Siberian levelling. This is certainly the most important levelling yet made, from its extent as well as from the importance of the results arrived at, bearing on the geography of Asia, the climate, etc. Part ii. of the same volume is issued. It contains A. Woeikof's paper, 'On a covering of snow, its influence on climate and weather.' Vol. xvi. is in print, and consists of a description of Lapland by Dr. Bucharow, formerly Russian consul at Hammerfest, the fruit of extensive travels in the country.

The branches of the geographical society are generally late with their reports, so that they have but just sent in those for 1884. From the East